I.A.P.T.

NOVEMBER 1951
VOL. I No. 2

TAXON

IN CO-OPERATION WITH UNESCO AND IUBS

Official News Bulletin of the International Association for Plant Taxonomy. Edited and Published for I.A.P.T. by the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht, Netherlands

MODERN TRENDS IN THE CLASSIFICATION OF PLANTS

by *)

W. B. Turrill (Kew)

Many modern trends in plant taxonomy are towards synthesis between the older methods and outlooks, and more recent developments in our knowledge of plants. Such synthesis has two results of importance to systematics: the production of special classifications and the improvement of general classification by widening the range of criteria and enabling better evaluation to be made of those already in use. It is essential to have some sort of classification at the very beginning of any biological investigation, however incomplete and tentative the scheme may be. It is sometimes convenient to refer to first attempts at systematic arrangement based solely on superficial characters as an alpha classification, and to envisage this being gradually improved, incorporating new knowledge and moving some way along the Greek alphabet to an ideal or omega classification which shall summate all possible knowledge of plant life. An omega classification may never be attained or attainable but we may assume, in all humility, that we are establishing ourselves in, shall we say, a beta position.

* * *

Phylogeny, like "Mesopotamia" in the first world war, is somewhat of a "blessed word." It has a pleasing comforting sound which no doubt does something to lessen the high-brow austerity of the word taxonomy. Phylogenetic speculation can undoubtedly be a great stimulus to research and for this reason can be fully justified. Judiciously used it can also be made to link together otherwise isolated facts and may thus become a convenient mnemonic device. The danger is that phylogenetic speculations tend to be presented as facts and even to become accepted as such, at least by the speculator. In a paper published in *The Botanical Review*, 1942, I went rather fully into the connections, as I saw them, between taxonomy and phylogeny and here only wish to emphasise one or two points that seem of considerable importance. To describe a classification as based on phylogeny surely implies that the phylogeny is known previous to the making of the classification in question. It seems to me that such knowledge can at present only be obtained directly in two ways: either by witnessing evolution or by studying its results as seen in series of fossils in the rocks. As to the former, it is only at about the species level that we thus have, or can have, evidence of how taxa have originated and developed phylogenetically.

Synthesis and analysis of polyploids, the appearance of mutations, and the effects of hybridisation have thrown much light on the origins of species and intraspecific variation

*) These paragraphs are taken from an address by W. B. Turrill to the British Association: Birmingham Meeting which appeared in print in "The Advancement of Science", No. 26 Sept. 1950. With the permission of the author these paragraphs were selected by the editor of "Taxon".

but very little on the phylogeny of the groups of higher taxonomic rank. For relevant fossil evidence, in the angiosperms, we are still waiting. Personally, I am forced to conclude that if we are to obtain sound evidence for constructing a phylogeny of the flowering plants, it will come from palaeobotany brought into line with what is known of the cytogenetics of existing plants. Whether such phylogeny will serve as a basis for a practical classification is doubtful, since it is inconceivable that a phylogenetic scheme can be linear, and whatever its type it would be a special classification.

* * *

Fortunately, there are signs that taxonomy is becoming reinstated in botany as a subject taught in our universities. We taxonomists appreciate the action of the University Grants Committee in making possible the creation of teaching posts in taxonomy in several university departments. It is particularly appropriate to express this appreciation here since the first lectureship in botanical taxonomy under this scheme was filled last year in the University of Birmingham. Perhaps we may even look forward to the creation, in the not too distant future, of chairs of botanical taxonomy.

It has to be confessed that taxonomy is not the easiest of subjects to teach. The best approach, in my opinion, is a double one: to teach the student to teach himself the practice of taxonomy and to guide him to an understanding of the fundamental principles of classification.

As far as possible, this double approach should be unified: principles become dogmas unless constantly applied to and tested by facts; merely to collect facts is to make bricks without building. Lectures in taxonomy should be reduced to a minimum; field and laboratory studies should be encouraged rather than reading, and should be maintained throughout the year, not just squeezed into the summer term. Above all, in teaching taxonomy, as in taxonomic research, the newer methods should be given prominence. If this be done and students complain that taxonomy is dull and of little importance, there is something genetically and incurably wrong with the students.

* * *

Plant systematics is not a dead subject limited to the study of "bits of hay" stuck on herbarium sheets and pigeon-holed in standardised cupboards. Without classification no research is possible. Even the plant physiologist has to say he is experimenting with sunflowers.

Radiating from his central task of sorting the wealth of the plant world into distinguishable classes, the taxonomist finds paths leading directly to the study of the composition, origin, and development of floras, to speculation on the origin and changing, make-up of taxonomic units, to considerations of heredity, hybridisation, and morphogenesis, and finally to the how, why, and wherefore of all that lives or has lived. To many this may sound exuberant exaggeration. Those who have taken part in our debates at the Systematics Association, or in the Director's Office or staff room at Kew, will consider it an understatement. Taxonomy is coming back into its own along modern lines, and younger students need have no fear that if they become taxonomists they will be specialising in an out-of-date subject with only an artificial interest. Nowadays, we taxonomists seek for data from ecologists, geneticists, biochemists, physiologists, horticulturists and all the other exponents of this or that branch of our science. We go outside the ranks of botanists and request help from zoologists, geologists, geographers, and many other specialists. No shame at our importunity, no false pride at our borrowing, and no hesitation in proclaiming the importance of our work prevent us from obtaining and using facts gleaned from many fields in order to make our classification as general as possible. The narrow taxonomist is dying out and will soon be known only by his fossilised records. Very probably he has always been much rarer than many biologists think, especially if they are not well acquainted with the history of taxonomy.

Nevertheless, taxonomists have their special problems, their original methods, and, one must add, their own peculiarities of outlook and criticism. They would form interesting material for psychological investigation. The satisfactory taxonomist is born, not made, at least in the sense that he must have a certain number of innate qualities. He must have a methodical mind with a liking for bringing order out of chaos. He should have a keen aesthetic perception of the beauty of shape, colour, and the relationship of parts. It may

sound strange to include qualities usually considered the peculiar attributes of the artist, as necessary to the make-up of the satisfactory taxonomist. Yet, if you consider taxonomic practices it must become clear that quickened appreciation of curves and other outlines and of balance of organs aids comparison at every stage. There is no doubt that many taxonomists are born collectors. This may be interpreted as their being endowed with an undue share of the acquisitive instinct. This needs to be kept under control but, as expressed in herbaria, is at least relatively harmless and may then be regarded as a sublimation of such developments of the acquisitive instinct as shown by many historical figures, from King Solomon to Hitler and Göring. The tremendous symbolic and possessional value ascribed to names from very ancient times, perhaps, explains in part some of the aberrations of nomenclaturists.

Finally, may I express the hope that what I have said here may contribute to the wider understanding of what are the aims and methods of modern plant taxonomy. We taxonomists desire to make our classifications more and more useful and can only do this through co-operation with all our colleagues. We work to serve and ask only for such recognition as we fairly deserve.

Editorial

The editors of "*Taxon*" are well pleased with the approval they have received from so many sides. It may safely be said that the first number has been received with enthousiasm, and this gives the editors the assurance that they are supplying a long-felt want.

Fresh copy for the next issue has been coming in but the flow is not yet sufficient. The editors once again wish to emphasize the necessity that members and institutes transmit all their information they regard as important to taxonomists. A list — by no means an exclusive one! — of news items and the kinds of articles they want has been given on p. 2 of the first number, and all readers are earnestly requested to study this list.

It is also of importance that we obtain correspondents in all parts of the world and members are invited therefore to volunteer as such.

The new Rules of Typification

by

J. Lanjouw, Rapporteur général

The text of these articles and recommendations (see also *Taxon* Vol. I, no. 1 p. 7) was accepted at Stockholm with the provision that the Editorial Committee was to reconsider certain points, and to reword certain phrases. These amendments and rewordings, which generally are of minor importance are being studied at the moment by the above committee, and this means that the text given here is provisional only.

The articles and recommendations have already been renumbered (in some cases the old numbers have been added in square brackets); they replace Art. 18 and Rec. IV—VII of the 3rd edition of the Rules.

Section 2. The type method

Article 18

The application of names of taxa is determined by means of *nomenclatural types*. A nomenclatural type (typus) is that constituent element of a taxon to which the name of the taxon is permanently attached, whether as an accepted name or a synonym. It follows that the name of a taxon must be changed if the type of the name is excluded (see art. 81 [66]).

Note 1: The nomenclatural type is not necessarily the most typical or representative element of a taxon; it is merely that element with which the name is permanently associated.

Note 2: A *holotype* ("type") is the one specimen or other element used by the author or designated by him as the nomenclatural type (that is, the element to which the name of the taxon is permanently attached).

Note 3: If no holotype has been indicated by the author who described a taxon, or when the holotype is lost or destroyed, a substitute for it must be chosen. The author who makes this choice must be followed unless it can

be proved that the choice was not made in accordance with Art. 19. The substitute may be either a *lectotype* or a *neotype*. A lectotype always takes precedence over a neotype.

A *lectotype* is a specimen or other element selected from the *original material* to serve as nomenclatural type when the holotype was not designated at the time of publication or so long as it is missing.

When two or more specimens have been designated as types by the author of a name (i.e. male and female, flowering and fruiting etc.) one of them must be chosen as *lectotype*.

A *neotype* is a specimen selected to serve as nomenclatural type so long as all of the material on which the name of the taxon was based is missing.

Recommendation III

For other specimens of special interest the following terms are recommended:

A *paratype* is a specimen other than the holotype cited with the original description. An *isotype* is a specimen which is (exact wording under discussion) a duplicate of the holotype. A *syntype* is one of two or more specimens or elements used by the author when no holotype was designated, or one of two or more specimens simultaneously designated as type.

Recommendation IV

It cannot be too strongly recommended that the original material, especially the holotype, of a taxon be deposited in a permanent responsible institution and that it be scrupulously cared for and preserved. When living material has been designated as type, it should be immediately preserved, whether it be a living plant in garden or greenhouse, or a culture in vitro.

Article 19

The choice of a lectotype or neotype is not binding if the original material is rediscovered, or if it can be shown that the *choice was based* on misinterpretation of the original description.

Article 20

Names based on types derived from modern material, *Algae* excepted, always take precedence over names based on fossil or subfossil specimens.

Note: Names based on fossil types cannot be used again for modern plants in violation of the rule excluding later homonyms (see art. 77 [61]).

Article 21

The nomenclatural type (holotype, lectotype or neotype) of a species or taxon below the rank of species is a single specimen or other element except in the following case:

For small herbaceous plants and for most non-vascular plants the type may consist of more than one individual, which ought to be conserved permanently and assembled on one herbarium sheet or preparation. If it is later proved that such a type herbarium sheet or preparation contains parts belonging to more than one taxon, the name must remain attached to that part (lectotype) which corresponds most nearly with the original description.

Notes:

1) For plants of which it is impossible to preserve a type specimen, the type may be a figure and/or a description.

2) In a species without a type specimen, the type may be a description or figure.

3) If a taxon is divided into a number of taxa of the same rank, the nomenclatural type of the original taxon must be the type of one of them.

4) If a taxon includes subordinate taxa, its nomenclatural type must be or include the type of one of the taxa in each subordinate rank.

Article 22

The nomenclatural type of an order and of taxa between order and family is a family, that of a family and of taxa between family and genus is a genus, and that of a genus and of taxa between genus and species is a species. The nomenclatural type of a taxon above the rank of genus, to the rank of order, whose name is formed in accordance with the Rules, is always the lower taxon whose name was derived from the same root (generic name).

Note: It is not felt that the type method can, at present be applied profitably to the nomenclature of taxa above the rank of order.

Recommendation V

Guide for the determination of types

The following set of suggestions is intended both as a guide to the application of the Rules and as an indication of sound practice in the determination or selection of the nomenclatural types of previously published taxa.

Where the application of a rule is embodied in a suggestion, reference is made to the appropriate article.

1. The choice of the original author, if definitely expressed at the time of the original publication of the name of the taxon, is final. If he included only one element, that one must always be accepted as the holotype (see Arts. 18, 21). If a new name is based on a previously published description of the taxon, the same considerations apply to material cited by the earlier author.

2. When a new name was published as an avowed substitute (nomen novum) for an older one (a new name based on the description accompanying an illegitimate or incorrect one) the type of the new name is automatically that of the old one.

3. A lectotype may be chosen only when an author failed to designate a holotype, or when, for species or taxa of lower rank, the type has been lost or destroyed (Art. 18 note 3).

4. Designation of a lectotype should be undertaken only in the light of an understanding of the group concerned. Mechanical systems, such as the automatic selection of the first species or specimen cited or of a specimen collected by the person after whom a species is named should be avoided as unscientific and productive of possible future confusion and further change. The original description of the taxon concerned should be the basic guide (Art. 19).

a. In choosing a lectotype any indication of intent by the author of a name should be given preference unless it is contrary to his description and remarks. Such indications are manuscript notes, annotations on herbarium sheets, recognizable figures, epithets such as *typicus, genuinus, vulgaris, communis* etc.

b. A lectotype must be chosen from among elements that were definitely studied by the author up to the time the taxon was published and included in it when it was published (Art. 18 note 3).

c. Other things being equal, specimens should be given preference over pre-Linnean or other cited descriptions or plates when lectotypes of species are designated.

d. In cases when two or more elements were included in or cited with the original description the reviewer must use his own judgment in selection of a lectotype, but if another author has already segragated out one or two elements as other taxa, the residue or part of it should be designated as the type if its essential characters correspond to the original discription. If it can be shown that the element best fitting the whole published original account has been removed, it shall be restored and treated as lectotype (Art. 19). Whenever the type material of a taxon is heterogeneous the lectotype should be selected so as to preserve current usage if possible.

e. The first choice of a lectotype should be followed by subsequent workers unless it can be shown that the choice does not fit the original description so well as another of the original elements (specimens, species, higher taxa etc.) (Art. 19).

5. In selecting a *neotype* even more care and critical knowledge are essential, since the reviewer has usually no guide except his own judgment to what best fits the original description. If his selection is faulty it will inevitably result in further change. The *neotype* may be selected only when all original material is believed lost or destroyed (Art. 18 note 3, Art. 20).

6. For names of fossil species the lectotype when one is needed should, if possible be a specimen illustrated at the time of the first valid publication.

7. The nomenclatural typification of organ genera, form genera, of genera based on plant microfossils (pollen, spores etc.), genera of imperfect fungi, or any other analogous genera, or lower taxa, does not differ from that recommended above.

FLORA MALESIANA

Present and prospects

by

C. G. G. J. van Steenis (Leiden)

"Flora Malesiana" is a regional Flora covering the mainly insular area i.e. Malaysia (in other languages "Malesia"), between the continents of Asia and Australia; it consists of the *Malay Peninsula, Indonesia, the British parts of Borneo, the Philippines, Portuguese Timor, Christmas Island (Ind. Ocean), and the island of New Guinea.*

As I have shown elsewhere [1]), the very rich flora of this region forms a tolerably

1) Tijdschr. Kon. Ned. Aardr. Gen. 65 (1948) 193—208; Fl. Mal. 1, 1 (1950) lxx—lxxv.

independent (or delimited) plantgeographical and taxonomical unit within the palaeotropical flora. It is subordinate to the tropical Asiatic flora from which it is less sharply demarcated than from the Australian flora. China and Malaysia are the remaining two big areas of the globe of which no modern or submodern Flora has been written. The "Flora Malesiana" is preceded by one other general Flora: the century old, now obsolete "Flora Indiae Batavae" of Miquel.

After decades of preparation the time has come to launch on the basis of international co-operation a modern Flora which, because it starts late, has the advantage of having at its disposal many more collections, (about 1 million in all), than if the work had been begun 50 years ago.

One of the disadvantages is that, in the course of years, these collections were deposited in many different institutes. For the revisions this necessitates a steady, large-scale dispatch of specimens among the larger Herbaria; there is no single central herbarium containing the bulk of the material required. Likewise no single individual could hope to revise the majority of the plant families on his own, as the total work on Phanerogams alone is estimated at 300 man/years full-day job.

The total number of genera to be revised is ca 2350, the total number of species lies between 25.000 and 30.000.

The project is, therefore, certainly an ambitious one, and like Rotary, it can only succeed by determined efforts, by general goodwill, and through international co-operation all over the world by many specialists and institutes. The "Flora Malesiana" will represent the endeavours of many and ultimately turn out to be a valuable asset for the development of human culture, since critical general Floras serve applied and pure sciences as they represent a basis for both. I have often felt that if there were as much goodwill and co-operation among politicians and governments as I find among botanists and institutes co-operating in our project, the world would surely be a nicer and safer place to live in.

Unfortunately the project has, as yet, not drawn the material support of a maecenas as was the good fortune of Flora Brasiliensis during some period of its genesis, but there is good reason to expect that the work can be executed by the combined assistance of concerned governments, of scientific institutes, and of individual persons.

(a) Governments. The staff of Flora Malesiana, consisting of a director, simultaneously general editor, is paid by an Indonesian "Foundation Flora Malesiana", sponsored by that Government. The permanent staff consists of 4 botanists (including the general editor), 5 permanent honorary botanists, an administrator and a typist. The Indonesian Government has, moreover, a contract with the publishing firm of Noordhoff-Kolff N.V., Groningen, Netherlands, to purchase 300 copies of the complete work.

(b) Institutes. It is a privilege to state that all major Herbaria have agreed to loans of material to the revisors. The total number of herbaria concerned is 40 according to the first halfyear report 1951. Among these the Herbarium Bogoriense at Bogor, Java, and the Rijksherbarium at Leyden, have a special position, as they are of outstanding importance for their unmatched Malaysian collections, both in respect to the number of types of described species of our area and the range of specimens.

Distinction is made between collaborating and co-operating institutes, the first allow their staff to participate in the work occasionally, the latter have agreed to loans of material only.

(c) Individual specialists number in total 53. They are working in many herbaria all over the world, mainly, however, in the northern hemisphere.

The estimated total number of species which will be revised by these 53 contributors is ca 8.000, that is about one third of the work. If this task can be accomplished within 8 years to come, a good start will have been made towards a completion within 25 years.

Five series have been planned, viz I. Phanerogams, II. Pteridophytes, III. Bryophytes, IV. Fungi and Lichens and V. Algae.

Of these only series I has been started, series II is being planned, series III is in the stage of preparation.

Each series will be organized by a special general editor; the present author is responsible for series I, and Prof. R. van der Wijk, Groningen, has agreed to act as general editor of series III.

Series I. Phanerogams is estimated to cover ca 15 volumes, of which volumes 1—3 will be dedicated to special subjects and will be issued as complete volumes, in contrast with the subsequent volumes which will appear in parts.

Vol. I covers all matters dealing with collections and collectors, location of specimens. Mrs M. J. van Steenis-Kruseman has been responsible for the evaluation of the exploration results of over 3000 collectors and

the location of over one million specimens from Malaysia. Of each collector data (if available) are given on biography, itinerary (in detail), references to literature pertaining to the exploration, size and location(s) of the collection, and sources of biographical data. Introductory chapters serve to elucidate wrongly located collections, general botanic literature, lists of expeditions and prominent explorers, exploration history of separate islands resp. archipelagos, samples of facsimile handwritings, hints for collecting in the tropics, etc.

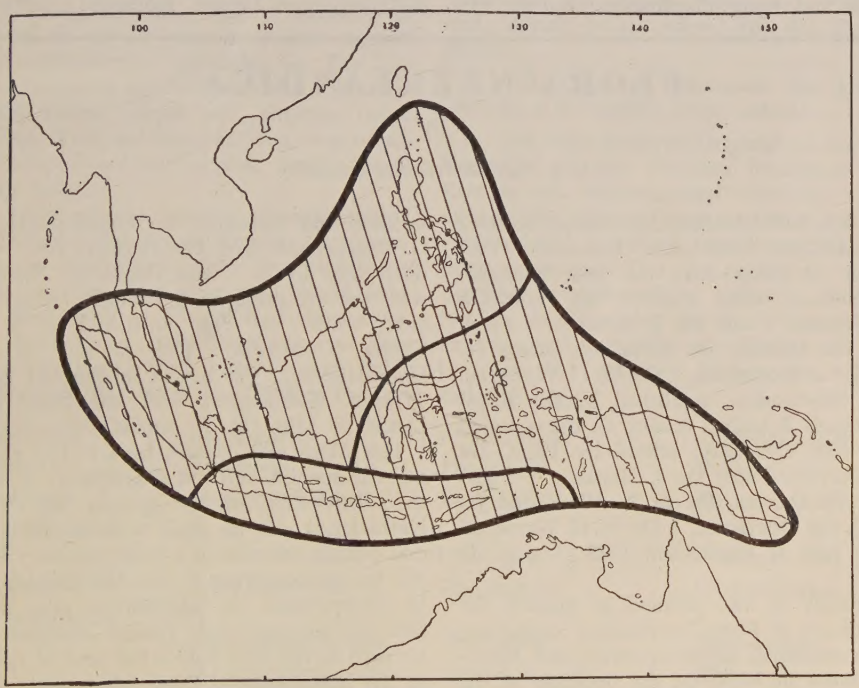
Volume 2 will deal with the vegetation types of the Malaysian region (in preparation).

Volume 3 will give a floristical plant geography of Malaysia as based on the distribution of genera, and an attempt at a historical plant geography of the Malaysian flora (in preparation).

Volumes 4 to 15 will contain illustrated revisions of the families of Phanerogams.

the Flora Malesiana and other long range regional Floras in the arrangement of the revisions. As far as I am aware no Flora has ever been planned to be written by so many contributors of widely different nationalities. This source of contributions from which the progress mostly depends, make it very desirable that the publication of revisions will be seen as a matter of opportunity and makes it impossible to follow a "systematic sequence" in their publication; printing starts when a MS is ready for the press. The value of following some set sequence in accordance with a system of families is, for the rest, disputable.

In every regional Flora there are besides many small genera and families some large ones. The number of large ones in the Malaysian flora is imposing: the biggest group of all being the Orchidaceae with ca 4000 described species. A revision of this will be a single man's magnum opus. This family also contains the colossal genera Bulbophyl-



As yet have appeared vol. 1 (1950): pp. clii + 639, vol. 4, part 1 (1948): pp.xl + 1—40 and vol. 4, part 2 (1949): pp.xli — clxi + 41—140. It is agreed by the editors with the subscribers that each year either an introductory volume or a part will appear. For 1951 vol. 4, part 3 is in the press.

There is some technical difference between

lum and Dendrobium, each containing ca 1000 spp. Other big genera are Eugenia, Ficus and Elaeocarpus each with ca 400—600 species. The second largest family is the Rubiaceae. As the Malaysian flora is, essentially, an arboreus one, ligneous families range with hundreds of species, such as the Myrtaceae, Dipterocarpaceae, Myristicaceae, Sapo-

taceae, Leguminosae, Lauraceae, Annonaceae, Palmae, and Moraceae. Families essentially bound to open, dry, or microtherm habitats are scarce. Still, Gramineae are estimated at about 600 and Compositae at ca 350 spp. Both contain many weeds.

However, the circumscription of families and the status and delimitation of genera and species will be very carefully considered and will contribute to the originality of the work. In some cases it will seem necessary to edit precursory papers on large taxa, the essence of which will be laid down in the Flora proper, in other cases (most small families) the revisions will directly be incorporated in the Flora.

This, and the fact that so many botanists contribute, will make the Flora somewhat variable in character, according to the contributor, but discordance will be avoided as far as is possible.

A point much neglected in many regional floras is the incorporation of data on ecology, altitude and exact distribution, and of the uses made of the plant. This will be given much attention, and it will be reflected in the illustrations of the Flora which will partly consist of photos of plants in their natural habitat.

Several regional floras were made on the basis of the material preserved in one or few herbaria, but for the work towards the "Flora Malesiana" much material from various sources will be assembled for the revisors.

As to the delimitation of the genera, and specially the species, the work will not pretend to be more than the standard of a critical α-taxonomical character, with a text as concise as possible under the circumstances. In some remote future, possibly more refined work can be done in situ.

Interested persons can obtain a free sample copy of the first part of this octavo work with the publishers Noordhoff-Kolff N.V. Groningen, Holland. The price is one Dutch guilder pro 16 printed pages.

Rijksherbarium Leiden, Holland.

FLORA NEERLANDICA

by

S. J. van Oostroom, (Leiden)

FLORA NEERLANDICA, uitgegeven door de Koninklijke Nederlandse Botanische Vereniging, ter gelegenheid van haar honderdjarig bestaan, onder redactie van Prof. Dr Th. Weevers, Prof. Dr J. Heimans, † Prof. Dr B. H. Danser, Dr Ir A. W. Kloos Jr, Dr S. J. van Oostroom, † Dr W. H. Wachter. (Flora Neerlandica, published by the Royal Netherlands Botanical Society on the occasion of its first centenary, edited by Prof. Dr Th. Weevers, Prof. Dr J. Heimans, † Prof. Dr B. H. Danser, Dr Ir A. W. Kloos Jr, Dr S. J. van Oostroom, † Dr W. H. Wachter. Vol. I, part 1, Amsterdam 1948 92 pag. 44 fig.).

Originally it was planned to publish the first volume of Flora Neerlandica, containing the *Pteridophyta, Gymnospermae and Monocotyledones* in 1945, on the occasion of the first centenary of the Royal Netherlands Botanical Society. This plan had to be altered as the unfavourable post-war circumstances made it impossible to publish the first volume at that date or even within a reasonable space and it was decided that the work would be issued in instalments at irregular intervals. The first instalment, vol. I part 1 was issued in 1948 and constains the Pteridophyta and Gymnospermae. The Pteridophyta have been dealt with by S. J. van Oostroom (Leiden), with the exception of the family *Lycopodiaceae*, which has been entrusted to A. W. Kloos (Dordrecht). The revision of the *Gymnospermae* was begun by the late B. H. Danser, (Groningen), and has been completed by Miss Ch. H. Andreas.

The Flora will contain keys to the genera and the species, and full descriptions of both; the distribution of the species within the Netherlands will be dealt with in detail and that outside the area in a more summary form. All species occurring in the Netherlands will be incorporated, the adventitious ones therefore are also included. Special attention will be paid to the taxa below the rank of species as the importance of these minor units, from a taxonomical as well as from a phytosociological or ecological point of view is more and more generally recognized. They will be fully described and notes on their distribution within the Netherlands will be added.

The second instalment, vol. I part 2, containing the *Gramineae*, which family has been dealt with by Dr P. Jansen (Amsterdam)

will appear in the near future. It will contain 272 pages text and 219 figures. A third instalment, also containing *Monocotyledones* is in preparation. The whole work will consist of 4 volumes, one on *Pteridophyta, Gymnospermae* and *Monocotyledones,* two on *choripetalous Dicotyledones,* and one on the *sympetalous* families of the latter.

Die Nomenklatur der höheren Taxa

by

W. Rothmaler (Halle/Saale)

In Stockholm wurde eine Reihe von Vorschlagen für die Nomenklatur der Naturreiche, Phyla, Klassen und Untergliederungen diskutiert. Ueber die Naturreiche wurde keine Beschluss gefasst, so das man sowohl die binären Bezeichungen wie Regnum vegetabile als auch die Namen auf *-bionta* verwenden kann. Für die Abteilungen (Phyla) und Unterabteilungen wurde die einheitliche Endung *-phyta* (bzw. *-phytina)* für verbindlich erklärt. Die Frage der Klassen aber fand eine Lösung, die mir nicht befriedigend erscheint, da sie an ganz bestimmte taxonomische Auffassungen gebunden ist. Die Endungen wechseln nämlich nach den Pflanzengruppen, indem Algen auf *-phyceae* (resp. *-phycidae),* Pilze auf *-mycota* (resp. *-mycotina)* und Cormophyten aus *-opsida* (resp. *-ideae)* endigen sollen.

Die Cormophyten sind im allgemeinen gut zu definieren; die Anwendungen der vorgeschlagenen Endungen stösst hier auf keine Schwierigkeiten. Was aber sind Algen und Pilze? Sind farblose Flagellaten Algen oder Pilze? Sind Viren und Bakterien zu den Pilzen zu rechnen? Und wozu gehören farbstoff-führende Bakterien und farblose Cyanophyceen? Besonders schwierig wird das Problem wenn man Organismensysteme bevorzugt, wie sie Barkley, Copeland und ich vorschlagen (cfr. A new system of organisms).

Man könnte drei Möglichkeiten als besonders geeignet in Erwägung ziehen.

1. Man verwendet für jedes Reich eine spezielle Endung, also *-vira* (resp. *virea)* für die Viren, *-schiceae* (resp. *schicidae)* für die kernlosen Organismen, *-phyceae* (resp. *-phycidae)* für Algen, Pilze und Flechten und *-opsida* (resp. *-ideae)* für die Cormophyten.

2. Alle Klassen bekommen die gleiche Endung, z.B. *-opsida* (resp. *-ideae).*

3. Bei allen niederen Organismen von den Viren bis zu den Flechten bekommen alle Klassen mit vorherrschend farblosen Organismen die Endung *-mycota* und die mit vorherschend gefärbten Organismen die Endung *-phyceae.* Das ist vielleicht die in Stockholm beabsichtigte Fassung. Betrachten wir im Folgenden die drei Möglichkeiten an ein paar Beispielen der Praxis und bitten wir die berufenen Stellen um baldige Entscheidung:

Aphanobionta	Globulovira	Globulopsida	Globulomycota
(Viren)	Phagovira	Phagopsida	Phagomycota
Akaryobionta	Bacterioschiceae	Bacteriopsida	Bacteriomycota
(Schizophyta)			
	Cyanoschiceae	Cyanopsida	Cyanophyceae
Protobionta	Cryptophyceae	Cryptopsida	Cryptophyceae
(Thallophyta)			
	Myxothallophyceae	Myxopsida	Myxomycota
	Rhizopodophyceae	Rhizopodopsida	Rhizomycota
	Rhodophyceae	Rhodopsida	Rhodophyceae
	Phycophyceae	Phycopsida	Phycomycota
	Basidiophyceae	Basidiopsida	Basidiomycota
Cormobionta	Bryopsida	Bryopsida	Bryopsida
(Cormophyta)			
	Lycopsida	Lycopsida	Lycopsida

Une flore du Congo Belge et du Ruanda-Urundi

par

W. Robyns (Bruxelles)

La connaissance de la flore et de la végétation naturelles constitue la base de la mise en valeur rationnelle de tout pays, tant dans le domaine agricole que dans le domaine forestier. Ceci est d'autant plus vrai pour le Congo Belge et le Ruanda-Urundi, qu'il s'agit d'un pays fort étendu, renfermant de nombreux territoires biogéographiques très différents les uns des autres.

L'étude de la flore du Congo Belge a commencé, dès 1895, au Jardin Botanique de l'État à Bruxelles. Elle a donné lieu à de nombreuses publications, surtout de la part de feu le Professeur Émile De Wildeman, ancien Directeur du Jardin Botanique de l'État et spécialiste bien connu de la flore africaine.

Toutefois, en dehors du „*Sylloge Flore Congolanae*", publié en 1909 par Th. et H. Durand, il n'existait aucun travail d'ensemble sur la Flore du Congo belge et du Ruanda-Urundi. La plupart des publications sont, en effet, éparses dans de nombreux périodiques disparates et parfois difficiles à consulter. Aussi, la nécessité d'une publication d'ensemble, mettant au point toutes les connaissances actuelles, s'imposait depuis longtemps aux autorités responsables.

C'est pourquoi l'Institut National pour l'Étude Agronomique du Congo belge, d'accord avec le Jardin Botanique de l'État, prit, en 1942 l'initiative de créer à Bruxelles un „Comité exécutif de la Flore du Congo Belge" chargé de la rédaction d'une Flore générale de ces territoires.

Le Comité exécutif de la Flore du Congo Belge, travaillant au Jardin Botanique de l'État, sous le présidence du Directeur du Jardin, élabora le plan d'une Flore Générale du Congo Belge et du Ruanda-Urundi, divisée en plusieurs séries:

Flore des Spermatophytes
Flore des Ptéridophytes
Flore des Bryophytes
Flore des Thallophytes.

Ces Flores, à la fois analytiques et descriptives, seront basées sur une révision critique de tous les matériaux d'herbiers congolais conservés au Jardin Botanique de l'État. Elles comprendront, en dehors des descriptions, des clés de détermination pour tous les taxa. Elles donneront pour chaque espèce et ses subdivisions: la bibliographie, l'iconographie et la synonymie limitée au Congo belge et au Ruanda-Urundi, la distribution géographique congolaise et générale, l'habitat, l'écologie, les noms vernaculaires et les usages.

L'entreprise est une oeuvre de collaboration entre le Jardin Botanique de l'État et l'Institut National pour l'Étude Agronomique du Congo belge. Ce dernier assure en outre la publication de l'ouvrage, dont une édition spéciale sur papier missel pour l'utilisation sur le terrain en Afrique.

Le travail d'exécution a commencé par la Flore des Spermatophytes, qui sont de loin le groupe le plus important comptant quelque 10.000 espèces. Ce groupe est d'ailleurs le mieux représenté dans les riches collections d'herbier congolaises du Jardin Botanique de l'État. Les familles des Spermatophytes y sont traitées dans l'ordre systématique de la dernière édition du Syllabus d'Engler.

L'ensemble de la Flore des Spermatophytes comprendra une vingtaine de volumes, richement illustrés de planches originales au trait et en couleurs, de dessins au trait et de photographies de plantes vivantes.

Deux volumes ont actuellement été publiés.

Le Volume I, paru en 1948, comprend les *Gymnospermes* et les premières familles des *Angiospermes-Dicotylédonées* jusqu'aux *Polygonaceae* incluses, soit 408 espèces.

Le Volume II, paru en 1951, comprend la suite des *Angiospermes-Dicotylédonées* depuis les *Chenopodiaceae* jusqu'aux *Hamamelidaceae* incluses, soit 478 espèces.

Le Volume III est actuellement en préparation et comprendra les *Légumineuses: Mimosaceae* et *Caesalpiniaceae*.

On peut estimer qu'il faudra aussi une vingtaine de volumes pour les flores des autres embranchements.

Le but de la Flore du Congo Belge et du Ruanda-Urundi est de servir à l'identification de toutes les plantes congolaises, aussi bien en herbier qu'à l'état vivant. Elle doit constituer une étape importante de nos connaissances sur la systématique et la phytogéographie du Congo Belge et du Ruanda-Urundi, et elle servira de base aux travaux ultérieurs, dans tous les domaines de la

Botanique pure et de la Botanique appliquée.

Cette oeuvre collective, de grande envergure et de longue haleine, est une manifestation de l'activité scientifique de la Belgique en Afrique tropicale. Sans avoir un caractère définitif, la Flore du Congo Belge et du Ruanda-Urundi est appelée à prendre place parmi les grandes flores régionales africaines.

A. E. T. F. A. T.

A meeting was held at the Herbarium, Royal Botanic Gardens, Kew, on 15th September, 1950, with Dr W. B. Turrill in the Chair, to discuss the formation of an association for the taxonomic study of the Tropical African flora, with the object of assisting the co-operation between individuals working on Tropical African plants. Twenty-one botanists were present from four countries and five institutions.

Mr A. W. Exell outlined the suggested aims of such an association and proposed that it should be called the *"Association pour l'Etude Taxonomique de la Flore d'Afrique Tropicale"* (AETFAT).

The following spoke in favour of the formation of the Association: Dr W. B. Turrill (Keeper of the Herbarium, Kew), Dr G. Taylor (Keeper of Botany, British Museum), Dr J. Léonard (Brussels), Mr A. C. Hoyle (Oxford), Dr A. R. da Torre (Lisbon).

It was not proposed to appoint a President, and, at least for the time being, there would be no subscription.

At a second meeting at Kew on 15th December, 1950, Mr R. D. Meikle was unanimously elected as Honorary Secretary, and further support for the objects of the Association was received from Dr G. Cufodontis (Vienna), Dr F. A. Mendonça (Lisbon) and Dr F. Meyer (Missouri Botanic Garden).

Promises of support have also been received from botanists in a number of other countries.

* * *

Objects of A.E.T.F.A.T.

The main object of AETFAT is to improve co-operation and communication between botanists interested in Tropical African taxonomy. In order to achieve this object, it is proposed:

(1) To invite those botanists actively engaged or interested in the study of the Tropical African flora to join the association, and to inform the Hon. Secretary of their particular interest.

(2) To circulate periodically a list of names and addresses of members giving their special interests, requirements and desiderata (specimens or information).

(3) To facilitate exchange of separates of published works, so far as is possible. Members are specially requested to send at least one copy of each work as published to the Hon. Secretary.

(4) To correlate work on floras in course of publication by attempting to reach agreement on nomenclature of species common to these floras, and, as far as possible, on the major points of taxonomy involved.

(5) To produce a series of maps showing the distribution of species of ecological importance or of special interest.

(6) To provide a link between members working in herbaria and those engaged in field studies in all parts of Tropical Africa.

(7) To arrange meetings between members of the Association for discussion of particular taxonomic problems, and for collaboration in their solution. (For example of such collaboration see "Clef Pratique des Marantacées Congolaises", in Bull. Soc. Roy. But. Belg., 83, 5—32, (1950). A second work on the genus *Clematopsis* is in course of publication).

Whilst it is fully realised that there is already much valuable co-operation between institutions, it is felt that a more personal contact between individual workers is desirable, especially between field-botanists and botanists working in the large herbaria.

The Hon. Secretary will be pleased to have any criticisms of the present proposals, and suggestions for any additions of improvements, within the scope allowed by the present limited resources.

* * *

A list of A.E.T.F.A.T. members, their addresses and interests, has been published in the second A.E.T.F.A.T. Bulletin (issued July 20th 1951). The response to the membership appeal has been very encouraging, and the Association has already more than 100 members. It is still possible that some botanists may not yet have received the application form, or that others may have mislaid or forgotten to return it. If such

persons will communicate with the Hon. Secretary, Mr R. D. Meikle, The Herbarium, Royal Botanic Gardens, Kew, Surrey, Great Britain, he will be pleased to enter their names on a supplementary membership list to be published with the next bulletin.

* * *

Meeting of A.E.T.F.A.T.

At the proposal of the Hon. Secretary, the first plenary meeting of A.E.T.F.A.T. will take (have taken) place in Brussels from 24th to 27th October 1951. This meeting will be held at Brussels University, under the Presidency of Professor L. Hauman. The programme will include a symposium on various subjects relating to the flora of Tropical Africa, with illustrated talks on the vegetation of different regions — the islands of the Gulf of Guinea (A. W. Exell), Mozambique (F. A. Mendonça), Nigeria (R. W. J. Keay and R. D. Meikle), North-Western Rhodesia (E. Milne-Redhead) and the vegetation of French Tropical Africal and the Belgian Congo. There will also be a business meeting to discuss the future organization of A.E.T.F.A.T. and other matters of topical interest.

Resolutions relating Taxonomy of the Seventh International Botanical Congress

(Stockholm — July 1950)

I. It is resolved that there be established an International Association for Plant Taxonomy, with a Bureau for Plant Nomenclature and Taxonomy, under the auspices of the International Union of Biological Sciences, and that the Society and Bureau include the International Commission for Botanical Nomenclature and the Standing Commission for Urgent Taxonomic Needs of the International Botanical Congresses, as well as the Commission for Plant Taxonomy of the International Union of Biological Sciences.

II. It is recommended that future International Botanical Congresses include a section for the history of the plant sciences which section, concerning itself with such subjects as botanical history, bibliography, will also offer an opportunity for papers and symposia dealing with the border lands between the natural sciences and the humanities, such as ethnobotany, history of cultivated plants, ethymology and history of plant names, philosophy and method of biology, methods of documentation, publication problems, etc.

III. It is strongly recommended that the existing institutions of taxonomic botany recognize the need of having properly balanced departments or sections for cryptogamic taxonomy and geography, each department or section to be comprised of specialists in the major groups.

IV. Because the fundamental concepts in phytosociology are still matters of dispute, and because the techniques of description of phytosociologic units are — as a consequence of that above-mentioned disagreement — still widely varying, it is considered premature to lay down, at the present moment, more definite rules as to the nomenclature of the phytosociologic units than those terminologic principles which were agreed upon by the 6. International Botanical Congress.

V. It is recommended that phytosociologists should, in the future, include in the description of phytosociologic units, of whatever order, a representative list of the species forming the community, if possible with indications of quantitative relations based upon statistical investigation.

VI. It is considered necessary, from the point of view of the needs of taxonomic and physiological research, to preserve the pure cultures of species and varieties of algae in existence, as well as to extend these collections as much as possible.

VII. It is resolved that within the existing Commission for Plant Ecology and Geography of the International Union of Biological Sciences and the International Botanical Congresses there be established two subcommissions: (1) for the phytogeographical classification of climates; (2) for small scale plant geographical maps.

VIII. It is resolved that the Seventh International Botanical Congress accept the decisions of the Section of Nomenclature and sanction the appointment of the Standing Committees by this Section.

DAS NATURHISTORISCHE MUSEUM IN WIEN

Im Herbar des Naturhistorischen Museums in Wien, Burgring 7, fehlen die folgenden Familien:

Cycadaceae
Taxaceae
Pinaceae
Gnetaceae
Typhaceae
Pandanaceae
Sparganiaceae
Potamogetonaceae
Najadaceae
Aponogetonaceae
Juncaginaceae
Alismaceae
Butomaceae
Hydrocharitaceae
Triuridaceae
Cyperaceae
Palmae
Cyclanthaceae
Araceae
Lemnaceae
Flagellariaceae
Restionaceae
Centrolepidaceae
Mayaceae
Xyridaceae
Eriocaulaceae
Rapateaceae
Bromeliaceae
Commelinaceae
Pontederiaceae
Phylidraceae
Juncaceae
Stemonaceae
Liliaceae
Haemodoraceae
Amaryllidaceae
Taccaceae
Dioscoreaceae
Iridaceae
Musaceae
Zingiberaceae
Cannaceae
Marantaceae
Burmanniaceae
Casuarinaceae
Saururaceae
Piperaceae
Chloranthaceae
Salicaceae
Lacistemaceae
Balanopsidaceae
Leitneriaceae
Juglandaceae
Betulaceae
Fagaceae
Ulmaceae
Moraceae
Urticaceae
Proteaceae
Loranthaceae
Myzodendraceae
Santalaceae
Grubbiaceae
Opiliaceae
Olacaceae
Balanophoraceae
Aristolochiaceae
Rafflesiaceae
Hydnoraceae
Polygonaceae
Chenopodiaceae
Didiereaceae
Amaranthaceae
Nyctaginaceae
Batidaceae
Cynocrambaceae
Phytolaccaceae
Aizoaceae
Portulacaceae
Basellaceae
Caryophyllaceae
Nymphaeaceae
Ceratophyllaceae
Trochodendraceae
Cercidiphyllaceae
Ranunculaceae
Lardizabalaceae
Berberidaceae
Menispermaceae
Magnoliaceae
Calycanthaceae
Lactoridaceae
Anonaceae
Myristicaceae
Gomortegaceae
Monimiaceae
Lauraceae

NOMENCLATURE COMMITTEES

Editorial Committee

The entire draft of the new Rules is now being studied by the Members of the Committee. Comments and proposals by the Members will be circulated among them. The first part of the final draft is now being prepared.

Committee to deal with urgent nomenclatural needs

The interim-report of the British subcommittee which is studying the question of *"Epitheta specifica conservanda"* will be printed in the next issue of Taxon.

Special Committee on Nomenclature of Cultivated Plants

Chairman: Dr W. H. Camp (Philadelphia)
Secretary: Mr W. T. Stearn, Lindley Library, Royal Horticultural Society, Vincent Square, Westminster, London S. W. I, England (Mr Stearn is also secretary of the International Committee of Horticulturists for the Nomenclature of Garden Plants).

The Subsection on Nomenclature of the 7th International Botanical Congress, Stockholm, 1950 set up a special committee (conveniently referred to as the *Stockholm Bot. Nom. Committee)* to deal with proposals regarding the nomenclature of cultivated plants. This committee prepared a new draft of Appendix VII to the International Rules. The basic principles and provisions of this revised version were accepted by the Stockholm Botanical Congress in principle, their final acceptance being conditional on like action at the next International Horticultural Congress to be held in London in 1952.

It was envisaged at Stockholm that there should be a preliminary joint meeting in 1951 between this Stockholm Committee and the comparable Committee of horticulturists (conveniently referred to as *London Hort. Nom. Committee)* set up for the International Horticultural Congress. The object of this meeting — comparable in function to the *Utrecht Symposion* — would be primarily to discuss the Stockholm proposals, with emphasis on the needs and difficulties of the horticultural trade grower (who was not so fully represented at Stockholm as those con-

cerned with botanic and private gardens) and to amend these regulations where necessary or desirable in order to produce a generally acceptable set of regulations on the naming of cultivated plants for presentation to the International Horticultural Congress, London 1952.

By courtesy of The Royal Horticultural Society, it has now been possible to arrange for such a *joint meeting* of the above two Committees, *to be held at The Royal Horticultural Society's Offices at Vincent Square, Westminster, London, S.W. 1, England on Thursday and Friday, 22 and 23 November, 1951,* and Saturday 24 November, 1951, if need be.

Special Committee for Musci

Two circular letters have been prepared by the secretary. The committee is now voting on three proposals; 1. the co-optation of two new members, 2. the fixation of the date of Hedwig's Species Muscorum and 3. the adoption of a number of nomina *generica* conservanda.

Special Committee for Hepaticae

Secretary: Dr Margaret Fulford, Department of Botany, Biology Building, University of Cincinnati, Cincinnati 21, Ohio, U.S.A.

Special Committee for Pteridophyta

Secretary: Prof. R. E. G. Pichi Sermolli, Istituto Botanico dell' Università, Via Lamarmora no. 4, Firenze, Italy. The editors of *Taxon* regret that on p. 10 of the first number the name of Mme. Tardieu Blot has been given as secretary of this committee. This statement was due to an administrative error for which they offer their apologies.

PRIX AUGUSTIN-PYRAMUS DE CANDOLLE

Un concours est ouvert par la *Société de Physique et d'Histoire naturelle de Genève* pour la meilleure monographie inédite d'un genre ou d'une famille de plantes.

Aucune condition de nationalité ou de domicile n'est imposée aux auteurs. Toutefois, les Membres de la Société ne sont pas admis à concourir.

Les manuscrits peuvent être rédigés en latin, français, allemand, anglais ou italien. Ils doivent être envoyés avant le 31 décembre 1952 à M. le Président de la Société de Physique et d'Histoire naturelle, Athénée, Genève.

Le montant du prix est de *mille francs suisses.*

Ce prix ne pourra être partagé. Il pourra être réduit ou n'être pas adjugé, dans le cas où les travaux présentés seraient jugés insuffisants ou ne répondraient pas aux conditions du présent avis.

Le mémoire couronné reste la propriété de son auteur.

Un règlement détaillé du concours sera envoyé sur demande adressée au secrétaire-correspondant de la Société de Physique, Bibliothèque publique et universitaire, Genève.

NEW TAXONOMIC LITERATURE

W. Rothmaler, Allgemeine Taxonomie und Chorologie der Pflanzen Jena (Verlag W. Gronau) 1950

Feddes Repertorium Specierum Novarum Regni Vegetabilis Akademie-Verlag, Berlin. Herausgeber: W. Rothmaler. Redaktionskollegium: Th. Herzog, R. Mansfeld, O. Schwarz, W. Zimmermann wird in Kürze sein Erscheinen mit Band 54 Heft 2/3 wieder aufnehmen.

Manuskripte aus allen Gebieten der botanischen Taxonomie, und Chorologie (Kryptogamen und Phanerogamen) werden entgegengenommen durch Prof. Dr W. Rothmaler, Botanisches Institut, Am Kirchtor 1, Halle/Saale, Germany.

Fred. J. Chittenden, O.B.E., F.L.S., V.M.H., Dictionary of Gardening, a practical and scientific encyclopaedia of horticulture. Ready in November 1951. Published under the auspices of The Royal Horticultural Society by the Oxford University Press. Four volumes more than 2.200 pp., large crown 4 to.

"The Aloes of South Africa", containing a detailed and lavishly illustrated account of this difficult genus, has been published by Mr G. W. Reynolds. Copies are available (price £ 3.13.6 + 3/6 postage outside South Africa) through "The Trustees, The Aloes of South Africa Book Fund, P. O. Box 2097, Johannesburg, South Africa. Mr Reynolds is now planning a similar work on Tropical African Aloes, and will be pleased to communicate with botanists able to send him localized Aloe specimens for cultivation.

REQUESTS

Stereocaulaceae

Dr I. Mackenzie Lamb, National Herbarium, National Museum of Canada, Ottawa, Ontario, Canada is preparing a world mono-

graph of the lichen family *Stereocaulaceae,* and would much appreciate the collection of exotic material of the genera *Stereocaulon* and *Argopsis* for inclusion in it. He would like to obtain especially recently collected specimens from the less wellknown exotic regions.

Antirrhinum

For his monograph of this genus, which is nearly ready for the press, Dr W. Rothmaler, Botanisches Institut, Halle/Saale, Germany, urgently needs seeds not only of the wild species but also of strains cultivated in Western Europe and Oversea. He woud be very glad to receive all the seeds available in order that he may finish his work in the course of next year. He is prepared to revise material of this genus and also of the *Antirrhineae* generally.

Scrophulariaceae, Fabaceae, Rosaceae

Dr W. Rothmaler is also working at present on the *Antirrhineae* (crf. Feddes Rep. 52, 16—39; 1943) and on the look-out for specimens of extra-european *Scrophulariaceae* and especially of *Euphrasieae (Rhinantheae, Bartsieae).* He has published some studies on *Ulex* et aff. (Bot. Jahrb. 72, 69—116, 1941), *Calicotome* etc. (l. c. 74, 271—287, 1949), *Cytisus* etc. (Feddes Rep. 53, 137—150, 1944) of the *Genisteae,* and he intends to go on with *Adenocarpus,* etc. He would be very obliged to everyone who would send him material. He continues the study of *Anthyllis* Sect. *Vulneraria* (Feddes Rep. 50, 177 seq., 1941) especially of Southern Europe, and he would like to revise specimens collected in that region. The Scandinavian taxa seem to be less specialized than the southern ones are, as one can learn from *Jalas'* works. The monographs of the genera *Lachemilla* and *Aphanes* are finished and ready for the press. But it is still possible to send him material for revision; above all he would like to receive specimens of *Aphanes* collected in South America. The work on *Alchemilla* progresses; at the moment he is working at a revision of the *Alpinae (Chirophyllum* and of the *Pubescentes (Heliodrosium).* A study of the species of the Middle-European regions and of the Balkan is in hand. He still needs specimens of *Margyricarpus* of eastern South America. A revision of *Tetraglochin* has already been published (Darwiniana III, 429—437, 1939).

Monadenium

Mr P. R. O. Bally is anxious to obtain living, dried or pickled material of the genus Monadenium, which he is planning to monograph. (Box 658 Nairobi, Kenia).

Acacia

Mr Mohammed Drar asks for localized seed of Tropical African Acacia species for cultivation in Egypt, and will be grateful for the assistance of members resident in Africa, or able to obtain seed from Africa. (Agr. Museum, Dokki, Cairo).

REGIONAL FLORAS IN PREPARATION

A new flora of the Netherlands Antilles is being prepared. The work is done at the Botanical Museum and Herbarium, Utrecht by Mr A. Stoffers, who intends to visit the islands in the course of 1952 and 1953.

* * *

Angola. Fascicle 2 of Vol. 1 of the "Conspectus Florae Angolensis" is expected to be published within the next two or three months and will comprise families *Malvaceae-Aquifoliaceae* (Bentham and Hooker system). Vol. II will be started this year and the first fascicle will contain families *Celastraceae-Connaraceae.*

TRANSFER OF MEMBERSHIP FEES

No taxonomists, other than those mentioned on page 6 of the first number of Taxon, have volunteered to act as financial agent for their country. In those countries for which we have as yet no representative, it has not been generally understood that the membership fee can be payed in Dutch florins or in the local currency if desired, against the exchange-rates ruling on the day of payment. Payment in Dollars or Sterling is preferred, but not obligatory. In most cases currency regulations will permit some kind of transfer, and members are invited to make use of the most convenient mode.

The acting financial agents are kindly requested to send a list of payments received up to November 1st 1951 to the International Bureau for Plant Taxonomy and Nomenclature.

Note for Dutch Taxonomists: De Nederlandse leden van de I.A.P.T. kunnen hun lidmaatschapsbijdrage over het jaar 1951 rechtstreeks zenden (per chèque, postwissel of contant aan het "International Bureau for Plant Taxonomy and Nomenclature", of deze per giro overmaken op postrekening no. 7247 van de heren Vlaer & Kol te Utrecht, onder vermelding: ten gunste van het "International Bureau for Plant Taxonomy".

Aangenomen wordt als geldende dollarkoers: *f* 3.80.

Isotypes and Arithmotypes

by

EDGAR T. WHERRY (Philadelphia)

According to Jackson's Glossary, isotypes are "forms common to different countries." In 1919 Pennell (in Torreya 19: 13) redefined the term to signify sheets bearing the same number as the holotype, with the warning that "such a term should emphasize the importance of all duplicates being thoroughly like the type." There being no rule requiring that the earliest definition of a term be kept as the valid one, isotype is nowadays somewhat widely used in the new sense; but the warning quoted is not always heeded.

In the *Polemoniaceae*, the family with which the writer is most familiar, there have been several cases where the assumption that sheets allotted the same number necessarily bear specimens of the same taxon has led to confusion. Three may be mentioned by way of illustration.

Under the Charles Wright number 1656 some herbarium assistant lumped together material representing 3 or 4 distinct taxa, and the specimens were widely distributed to herbaria. Two were retained by Asa Gray, and he based his diagnosis of *Phlox drummondii* var. *villosissima* in part on one and in part on the other. Under Article 64 of the Rules his varietal epithet is, then, illegitimate; but this has not been realized, and subsequent workers have used it for whatever taxon happened to be on the sheet numbered 1656 in the herbarium in which each worked, resulting in considerable misunderstanding and misidentification of herbarium material.

Similarly, several distinct taxa received the E. Palmer number 391, and Brand, in his treatment of the *Polemoniaceae* in the Pflanzenreich, based two epithets, one in species and the other in subvarietal status, on material bearing this number which had reached the herbaria he consulted. Interpretation of the taxa concerned is here still more difficult.

Elsewhere in his Pflanzenreich monograph Brand described a well-differentiated taxon as *Polemonium helleri*, on the basis of specimens labelled Heller 7190 in the Berlin-Dahlem and the Delessert herbaria. Recently, in a rather superficial study of the genus *Polemonium* (University of California Publications in Botany, 23, 1950). Davidson stated that "*P. Helleri* Brand is not here considered a valid species since the isotypes *(Heller 7190)* are typical *P. coeruleum* ssp. *occidentale* and do not exhibit the diagnostic features cited by the author." The sheets referred to were, then not isotypes at all; they bore the same number but not the same taxon at the holotype. They deserve to be designated merely ARITHMOTYPES.

To avoid endless confusion of these sorts, it is here urged that when neither a holotype nor a clastotype (portion of the same clone) are accessible, and only an arithmotype is at hand, the latter should be used to interpret a taxon only if it agrees in all respects with the original diagnosis.

Supporting Members I. A. P. T.

The following Institute joined the I.A.P.T. as a supporting member:

Department of Agriculture, Union of South Africa, Division of Botany and Plant Pathology (Departement van Landbou, Unie van Suid-Afrika, Afdeling Plantkunde en Plantsiektekunde), 590 Vermeulen Street, Pretoria.

"Taxon" is directed by: Prof. J. Lanjouw, Chief Editor, and Dr F. A. Stafleu, Assistant-Editor. All correspondence should be sent to the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Holland.
All members of I.A.P.T. receive "Taxon" free of charge. Copies of personal members are for private use only and should not be placed in official libraries.
"Taxon" is not on sale. Special regulations for Libraries and Institutes will be supplied on request.